

Metal Industry Indicators

Indicators of Domestic Primary Metals, Steel, Aluminum, and Copper Activity

April 2000

New Leading Index of Metal Prices

The U.S. Geological Survey (USGS) has revised the metals price leading index. The new leading index is shown in Chart 1, plotted with the old index. This step was taken because the old leading index has not performed as well as had been hoped since it was last revised in May 1997. The old index consists of annualized growth rates for the following indicators: the Organization for Economic Cooperation and Development (OECD) Total Leading Index, U.S. new orders for nonferrous and other primary metals, the inflation-adjusted value of U.S. M2 money supply, and an index of permits for new U.S. private housing.

The new leading index contains only one indicator from the old index, the annualized growth rate of new orders for nonferrous and other primary metals. The other indicators in the new leading index are the spread between the U.S. 10-year Treasury Note and the Federal Funds rate, the annualized growth rate of a trade-weighted average exchange value of major currencies against the U.S. dollar, and the annualized growth rate of another index of future international economic activity, the 14-Country Long Range Gauge calculated by the Economic Cycle Research Institute, Inc. (ECRI)¹. The new metals price leading index signals significant changes in price growth about 8 months in advance compared to 7 months for the old leading index.

The USGS selected the ECRI long-range gauge instead of the OECD Total Leading Index because the ECRI gauge performed better than the OECD index in the new metals price leading index. However, the OECD Total Leading Index still remains a good indicator of the future direction of metal prices.

The old metals price leading index, which was overweighted with U.S. indicators, worked until the beginning of 1997 when it started signaling higher growth in metal prices to begin about the middle of that year. In actuality, most metal prices began declining, due partly to the Southeast Asian financial crisis and poor economic growth in other countries. The reason for this false signal was rapid growth in inflation-adjusted U.S. M2 money

supply and new housing permits that pushed the old metals price leading index higher between mid-1997 and the end of 1998. This, of course, reflected strong growth in the U.S. economy while other metals-consuming economies experienced poor growth.

Since the initial publication of the Metal Industry Indicators, the USGS has found that the effectiveness of leading indexes at the industry level is more short-lived and unpredictable than those at the macroeconomic level. The USGS has not formally investigated the reasons for this, but rapid changes in the world's economic activity and institutions, and the lack of consistent and timely data to measure the effects of such changes on industries seem to contribute to the difficulty of building and maintaining industry-level indexes.

Presently, the new leading index is a better predictor of actual metal price growth both in recent and earlier years. Moreover, these indicators are believed to be more representative of the international economic environment in which metals are produced, traded, and consumed. Still, it will be necessary to monitor the new leading index and change it if one or more of its indicators become ineffective. Finally, it is important to watch the trend of metal products inventories along with the trend of the metals price leading index before drawing conclusions about the future direction of metal prices.

The new metals price leading index decreased 1.8% in February, the latest month for which it is available, moving down to 107.2 from 109.2 in January. The index's 6-month smoothed growth rate fell to -2.9% from 0.2% in January, the lowest growth rate for this index since June 1998. Three of the index's four components were available for February, and all three moved lower. The growth rate of the exchange value of major currencies against the U.S. dollar accounted for about half the decline in the index. The yield spread and the growth rate of new orders for nonferrous metals posted smaller declines.

The 6-month smoothed growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories slowed to -5.0 in February from a revised -2.6% in January. However, this was the first decrease in inventory growth following three consecutive increases. (This indicator has an inverse relationship with prices.) The actual level of these inventories also declined in February, dipping to their lowest level in 21 months.

¹The 14-Country Long Range Gauge is a GDP-weighted average of gauges for 14 economies: The United States, Canada, Germany, France, the United Kingdom, Italy, Spain, Switzerland, Sweden, Japan, Korea, Taiwan, Australia, and New Zealand. The Economic Cycle Research Institute has constructed the gauges for these countries so that they are comparable across borders and can easily be aggregated to yield a leading index of the international economy.

The recent trend of the newly revised metals price leading index holds out little prospect for large increases in most metal prices in the near term. The increases in inventory growth from November to January tend to confirm that prognosis.

Metal Industry Leading Indexes Move Lower

The primary metals leading index fell 1.3% in March to 125.5 from a revised 127.2 in February, and the index's 6-month smoothed growth rate dropped to -4.3% from a revised -1.9% in February. A growth rate below -1.0% usually signals a downward near-term trend in industry activity.

The March leading index should be considered preliminary because only four of the index's eight components were available for its computation. All four available components decreased in March with the length of the average workweek in primary metals establishments accounting for about half of the March drop. The leading index suggests that slower growth or even a downturn in primary metals industry activity is becoming more likely.

February was a remarkably negative month for the metal industry leading indexes. Based on the latest available data, February is the first month in 5 years to show a decline for all five metal industry leading indexes. The size of those declines ranged from -0.6% for the aluminum mill products leading index to -2.6% for the copper leading index, and on average, the declines were larger than any time since the 1981-82 recession.

Much of the downward movement in these indexes can be attributed to the falling stock market, although most of the other indicators in the leading indexes decreased as well. Four of the five leading indexes contain a stock price index, and for each of those four indexes, the stock price component made the largest negative contribution to the February index decline. Declining metal prices were also a major negative factor in the primary metals, steel, and copper leading indexes.

Based on the growth rates of their leading indexes, the steel, primary aluminum, and aluminum mill products industries could see flat-to-modest growth in the coming months. In contrast, the copper leading index appears to be pointing to further declines in copper industry activity in the near term.

Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

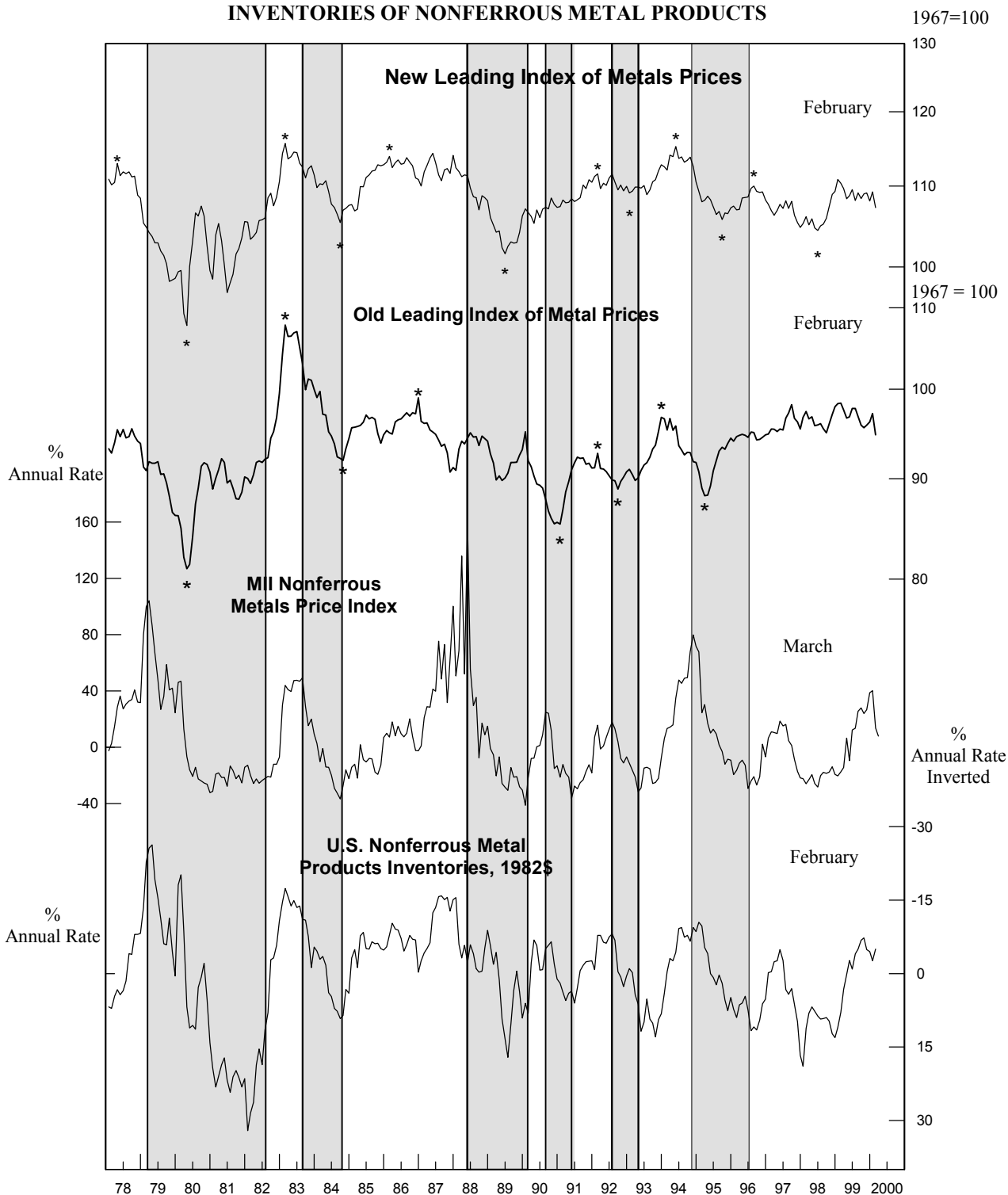
		Six-Month Smoothed Growth Rates				
	Leading Index of Metal Prices (1967=100)	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982\$)	Primary Aluminum	Primary Copper	Steel Scrap
1999						
February	110.3	-17.5	7.9	-20.2	-26.4	-17.8
March	109.7	-14.4	3.2	-12.6	-25.1	-29.8
April	108.4	6.4	0.2	8.8	-1.7	-25.3
May	108.7	-9.6	-2.7	-4.9	-21.7	-7.6
June	109.5	12.2	-0.9	15.3	11.7	2.2
July	108.2	13.5	-4.0	15.8	11.4	4.4
August	109.1	25.6	-5.0	26.7	21.7	24.9
September	108.4	27.9	-6.8	28.0	31.0	26.6
October	109.0	23.8	-7.3r	24.4	28.0	26.2
November	109.1	26.6	-4.9r	29.4	26.5	42.7
December	108.1	38.6	-4.5	42.7	38.3	55.8
2000						
January	109.2	40.1	-2.6r	52.1	29.7	55.2
February	107.2	13.7	-5.0	20.6	7.6	22.7
March	NA	7.8	NA	9.6	9.8	19.8

NA: Not available r: Revised

Note: The components of the Leading Index of Metal Prices are the spread between the U.S. 10-year Treasury Note and the Federal Funds rate, and the 6-month smoothed growth rates of the deflated value of new orders for nonferrous metals, the Economic Cycle Research Institute's 14-Country Long Range Gauge, and the reciprocal of the trade-weighted average exchange value of the U.S. dollar against other major currencies. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metals and nonferrous metal products. Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.

Sources: U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); the Bureau of the Census; the Economic Cycle Research Institute, Inc. (ECRI); and Federal Reserve Board.

**CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES
OF NONFERROUS METALS PRICE INDEX AND
INVENTORIES OF NONFERROUS METAL PRODUCTS**



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
April	127.4r	1.8r	111.0	0.1
May	128.7r	3.9r	111.5	1.2
June	129.5r	4.9r	112.2	2.3
July	129.3r	4.3r	113.1	3.8
August	129.4r	4.1r	113.4	3.8
September	128.5r	2.2r	113.2	3.2
October	128.4r	1.6r	112.8	2.3r
November	128.6r	1.5r	113.8	3.6r
December	128.7r	1.3r	114.4r	4.0r
2000				
January	130.1r	2.9	114.8r	4.1r
February	127.2r	-1.9r	114.6	3.3
March	125.5	-4.3	NA	NA

NA: Not available r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index	February	March
1. Average weekly hours, primary metals (SIC 33)	0.0	-0.7
2. S&P stock price index, machinery, diversified	-1.1r	-0.1
3. Ratio of price to unit labor cost (SIC 33)	0.1	NA
4. Metals price index growth rate	-0.3r	-0.3
5. New orders, primary metals, (SIC 33) 1982\$	-0.2	NA
6. Index of new private housing units authorized by permit	-0.4	NA
7. Growth rate of U.S. M2 money supply, 1992\$	-0.5	NA
8. Purchasing Managers' Index	0.1	-0.3
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-2.3r	-1.4
Coincident Index	January	February
1. Industrial production index, primary metals (SIC 33)	0.0r	0.1
2. Total employee hours, primary metals (SIC 33)	0.1	0.1
3. Value of shipments, primary metals, (SIC 33) 1982\$	0.2r	-0.4
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.4r	-0.1

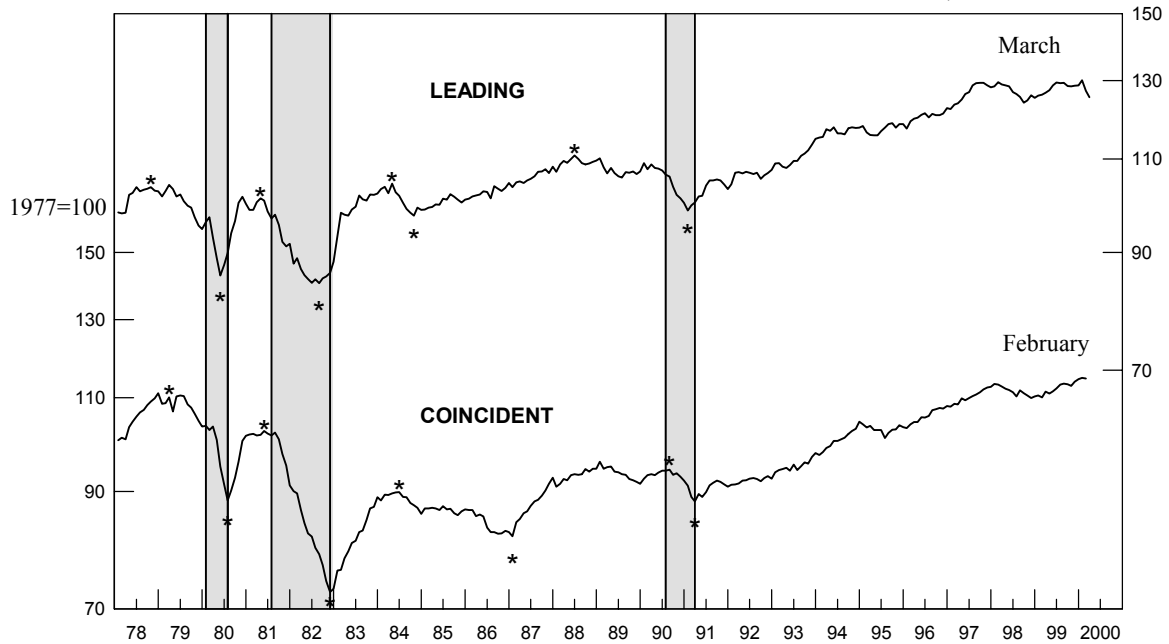
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's; 3, U.S. Geological Survey; 4, Computed by the U.S. Geological Survey from individual monthly metals prices from the Journal of Commerce; 5, Bureau of the Census and U.S. Geological Survey; 6, Bureau of the Census and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA: Not available r: Revised

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

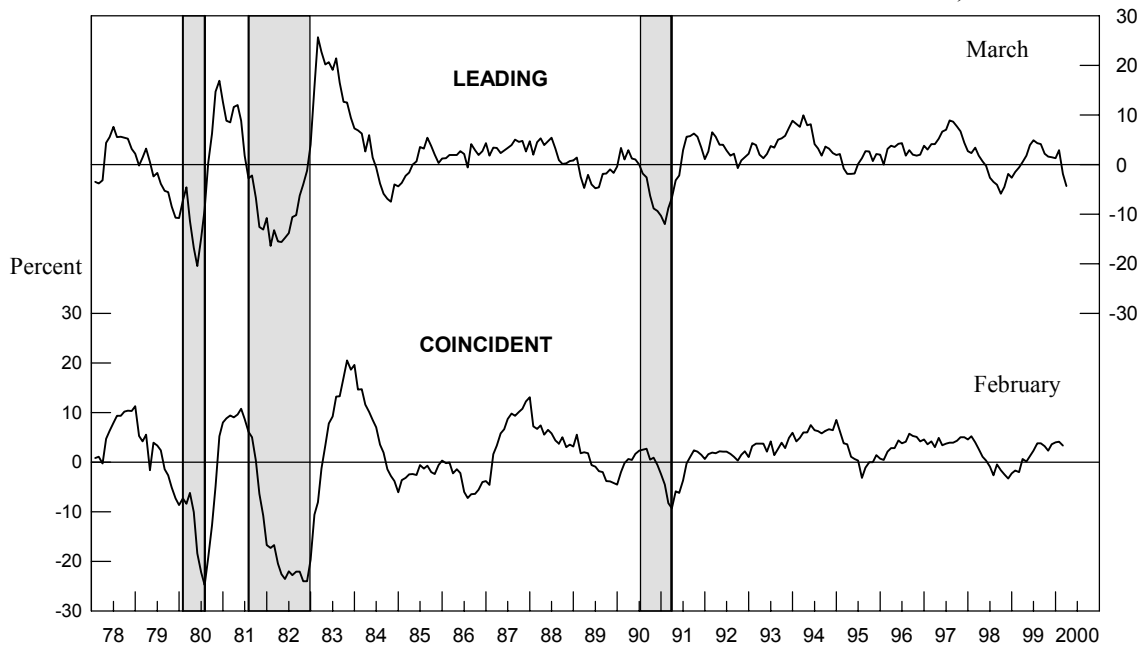
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1978-2000 1977=100



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1978-2000 Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
March	110.5r	1.7r	98.4	-0.3
April	111.5r	3.6	98.6	0.6
May	112.5r	5.3r	99.2	1.8
June	113.0r	5.9r	99.6	2.8
July	112.8r	5.1	100.3	4.1
August	113.1r	4.8r	101.1	5.5
September	111.1r	0.8r	101.0	4.9
October	111.6r	1.1r	101.1	4.6r
November	112.6r	2.2r	102.1	6.0
December	112.7r	2.0r	102.3r	5.5r
2000				
January	113.7r	3.0r	102.4r	4.8r
February	111.5	-1.3	102.6	4.3

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

Leading Index	January	February
1. Average weekly hours, blast furnaces and basic steel products (SIC 331)	-0.3r	0.3
2. New orders, steel works, blast furnaces, and rolling and finishing mills, 1982\$, (SIC 331)	0.2r	-0.1
3. Shipments of household appliances, 1982\$	0.4r	0.0
4. S&P stock price index, steel companies	-0.1	-0.8
5. Industrial production index for automotive products	0.3r	-0.1
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	0.0	-0.5
7. Index of new private housing units authorized by permit	0.4	-0.3
8. Growth rate of U.S. M2 money supply, 1992\$	-0.1r	-0.5
9. Purchasing Managers' Index	-0.1	0.1
Trend adjustment	0.0	0.0
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Percent change (except for rounding differences)	0.7r	-1.9
Coincident Index		
1. Industrial production index, basic steel and mill products (SIC 331)	-0.1	0.2
2. Value of shipments, steel works, blast furnaces, and rolling and finishing mills (SIC 331), 1982\$	0.2r	-0.2
3. Total employee hours, blast furnaces and basic steel products (SIC 331)	-0.1	0.1
Trend adjustment	0.1	0.1
	<hr/>	<hr/>
Percent change (except for rounding differences)	0.1	0.2

Sources: Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey; 4, Standard & Poor's; 5, Federal Reserve Board; 6, Journal of Commerce and U.S. Geological Survey; 7, Bureau of the Census and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of the Census and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

r: Revised

CHART 4.
STEEL: LEADING AND COINCIDENT INDEXES, 1978-2000

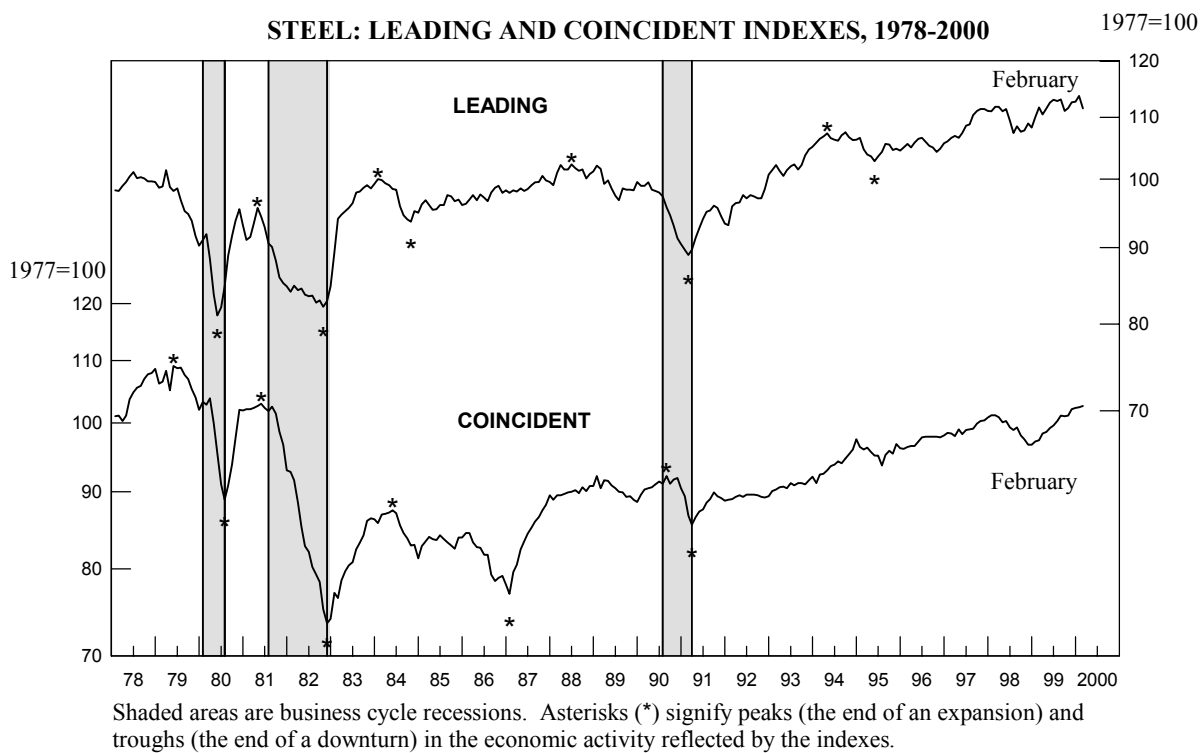


CHART 5.
STEEL: LEADING AND COINCIDENT GROWTH RATES, 1978-2000

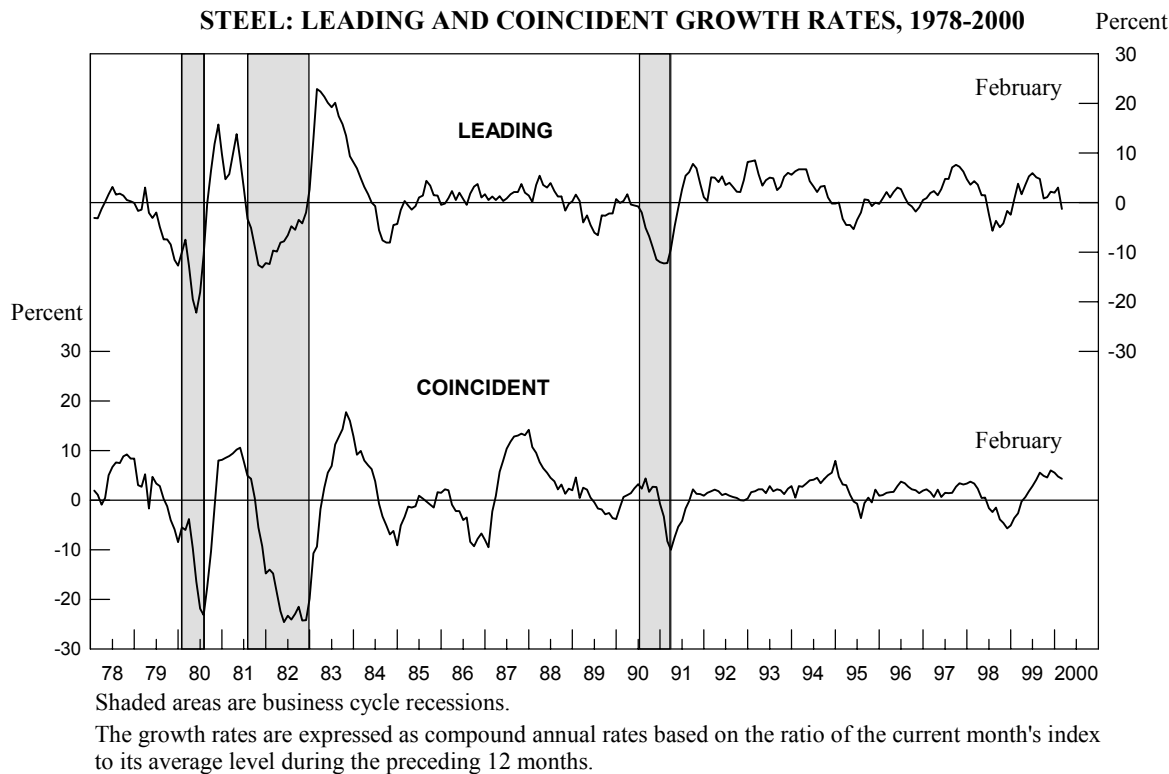


Table 6.
The Aluminum Mill Products Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
March	156.2r	3.2	140.6	0.4
April	156.1r	2.7r	140.7	0.5
May	157.6r	4.3	141.4	1.5
June	159.1r	5.5r	142.3	2.6
July	158.8r	4.3	141.6	1.5
August	157.9r	2.4r	143.7	4.5
September	157.3r	1.5r	142.7	3.0
October	155.1r	-1.4r	142.8	3.0
November	154.8r	-1.7r	141.3r	0.6r
December	156.6r	0.2r	142.9	2.3
2000				
January	158.9r	2.7r	143.4r	2.6r
February	157.9	1.1	143.4	2.2

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

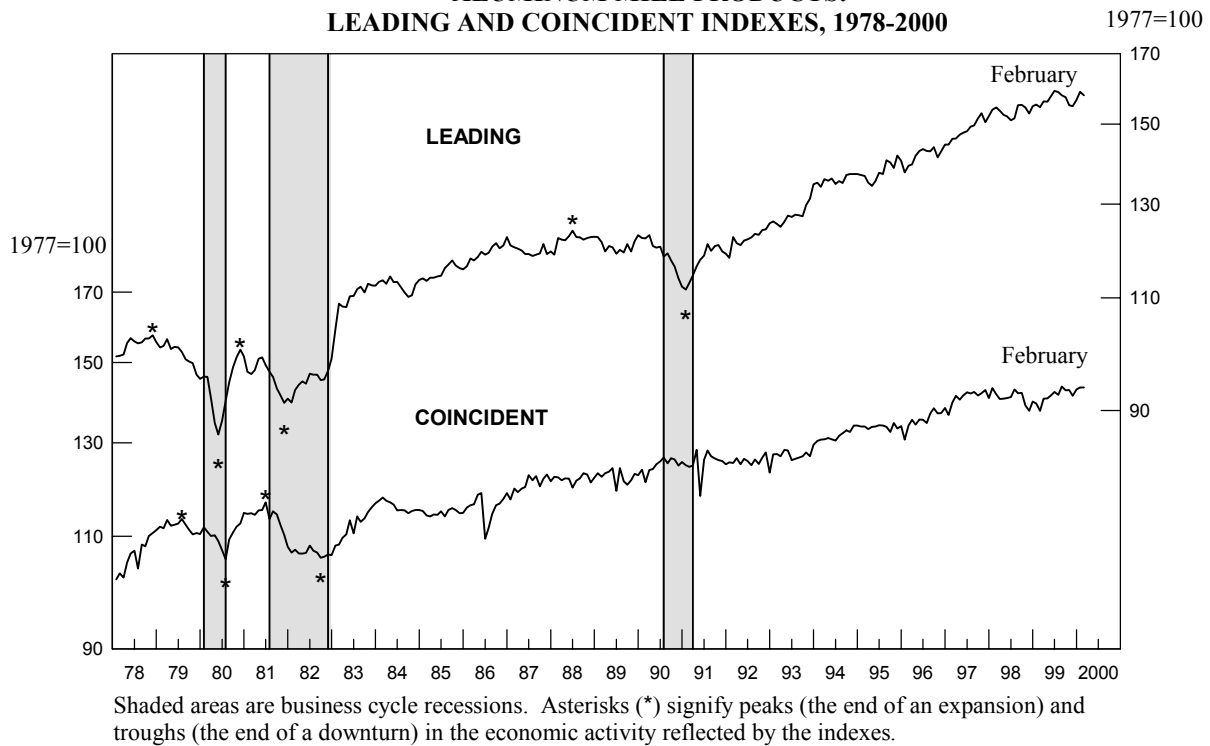
Table 7.
The Contribution of Each Aluminum Mill Products Index Component to the Percent Change in the Index from the Previous Month

Leading Index	January	February
1. Average weekly hours, aluminum sheet, plate, and foil (SIC 3353)	0.1r	-0.3
2. Index of new private housing units authorized by permit	0.5	-0.4
3. Industrial production index for automotive products	0.3	-0.2
4. Construction contracts, commercial and industrial (square feet)	1.0r	0.5
5. Net new orders for aluminum mill products (pounds)	-0.5r	0.2
6. Growth rate of U.S. M2 money supply, 1992\$	-0.1	-0.6
7. Purchasing Managers' Index	-0.1	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	1.3r	-0.6
Coincident Index		
1. Industrial production index, aluminum sheet, plate, and foil (SIC 3353)	0.0	0.2
2. Total employee hours, aluminum sheet, plate, and foil (SIC 3353)	0.2r	-0.3
Trend adjustment	0.2	0.2
Percent change (except for rounding differences)	0.4r	0.1

Sources: Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Federal Reserve Board; 4, F.W. Dodge, Division of McGraw-Hill Information Systems Company; 5, The Aluminum Association, Inc. and U.S. Geological Survey; 6, Federal Reserve Board, Conference Board, and U.S. Geological Survey; 7, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted.

r: Revised

**CHART 6.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT INDEXES, 1978-2000**



**CHART 7.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT GROWTH RATES, 1978-2000**

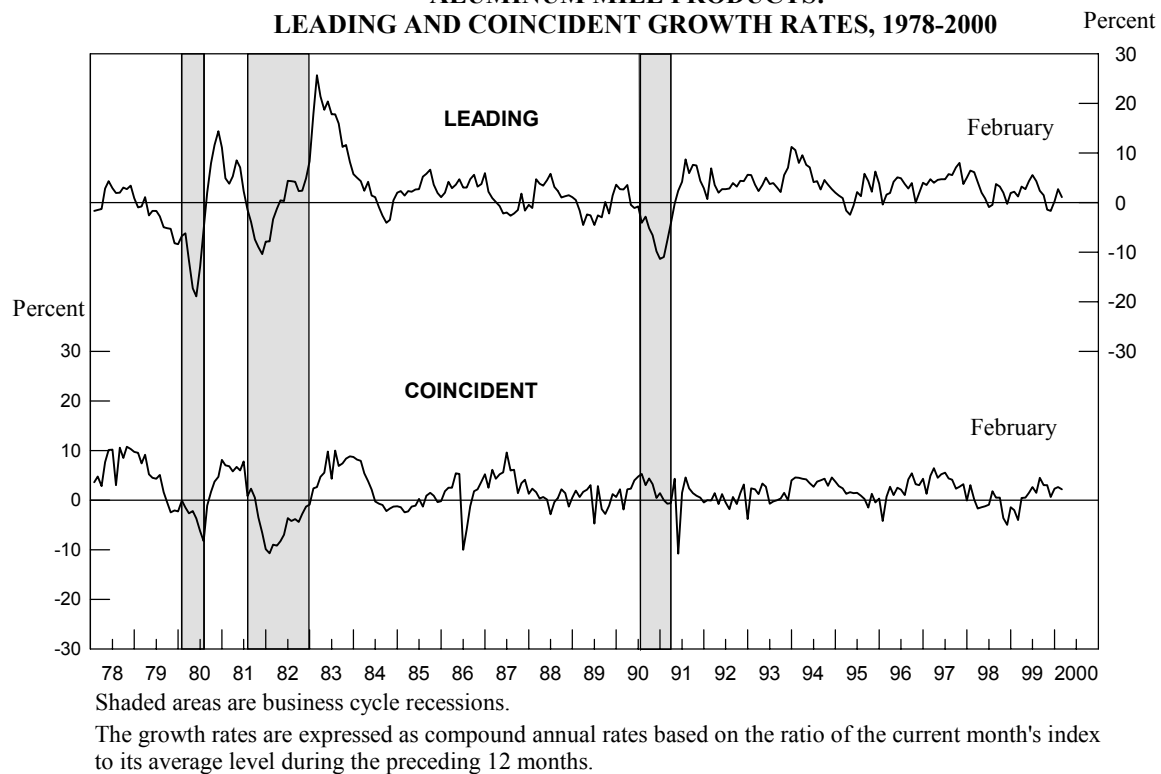


Table 8.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
March	128.6	0.2	125.4	0.8
April	130.3	2.6	124.8	-0.2
May	130.4	2.3	123.4	-2.4
June	132.4	4.9	122.8	-3.1
July	133.2	5.5	123.0	-2.6
August	132.7	4.2	122.8	-2.6
September	132.2	2.9	121.6	-4.0
October	131.2	0.9	122.1	-2.9
November	130.2	-1.0	121.6	-3.2
December	129.7	-1.8	121.6r	-2.7r
2000				
January	131.2	0.4	121.1r	-3.0r
February	127.8	-4.4	121.6	-1.9

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 9.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

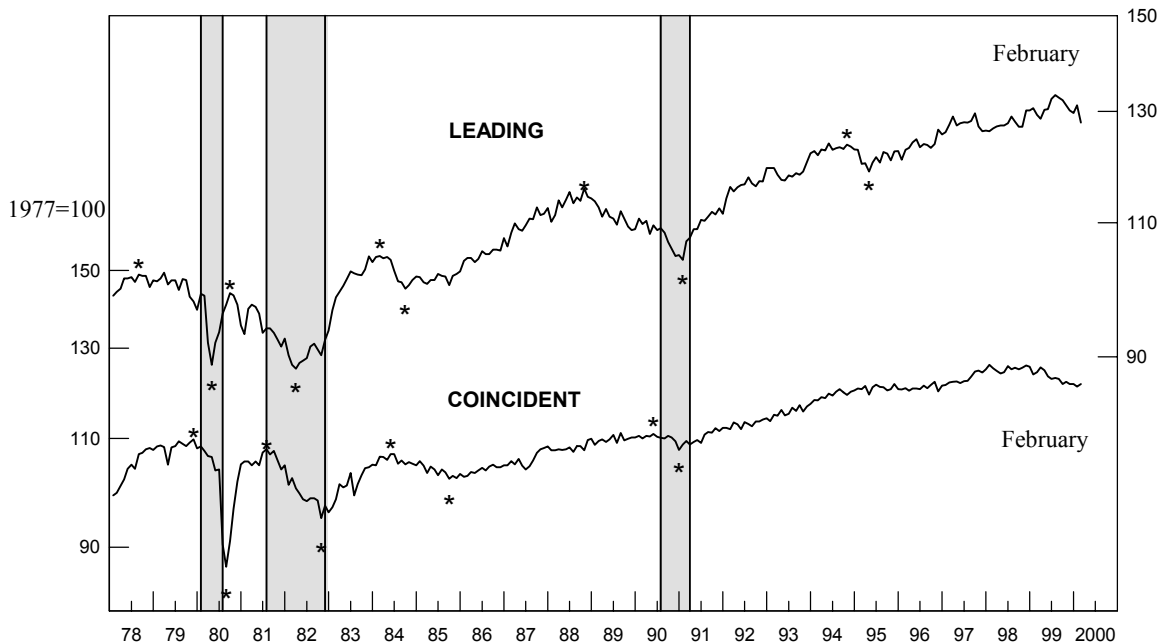
Leading Index	January	February
1. Average weekly overtime hours, rolling, drawing, and extruding of copper (SIC 3351)	0.0	0.3
2. New orders, nonferrous and other primary metals, 1982\$	0.1	-0.2
3. S&P stock price index, building materials companies	-0.5	-1.3
4. Ratio of shipments to inventories, electronic and other electrical equipment (SIC 36)	0.9	-0.3
5. LME spot price of primary copper	-0.1	-0.4
6. Index of new private housing units authorized by permit	0.6	-0.4
7. Spread between the U.S. 10-year Treasury Note and the Federal Funds rate	0.2	-0.3
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	1.2	-2.6
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (SIC 3331)	0.2r	-0.8
2. Total employee hours, rolling, drawing, and extruding of copper (SIC 3351)	-0.1r	1.2
3. Copper refiners' shipments (short tons)	-0.7	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.5r	0.5

Sources: Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Standard & Poor's; 4, Bureau of the Census and U.S. Geological Survey; 5, London Metal Exchange; 6, Bureau of the Census and U.S. Geological Survey; 7, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 5, and 7 of the leading index.

r: Revised

CHART 8.
COPPER: LEADING AND COINCIDENT INDEXES, 1978-2000

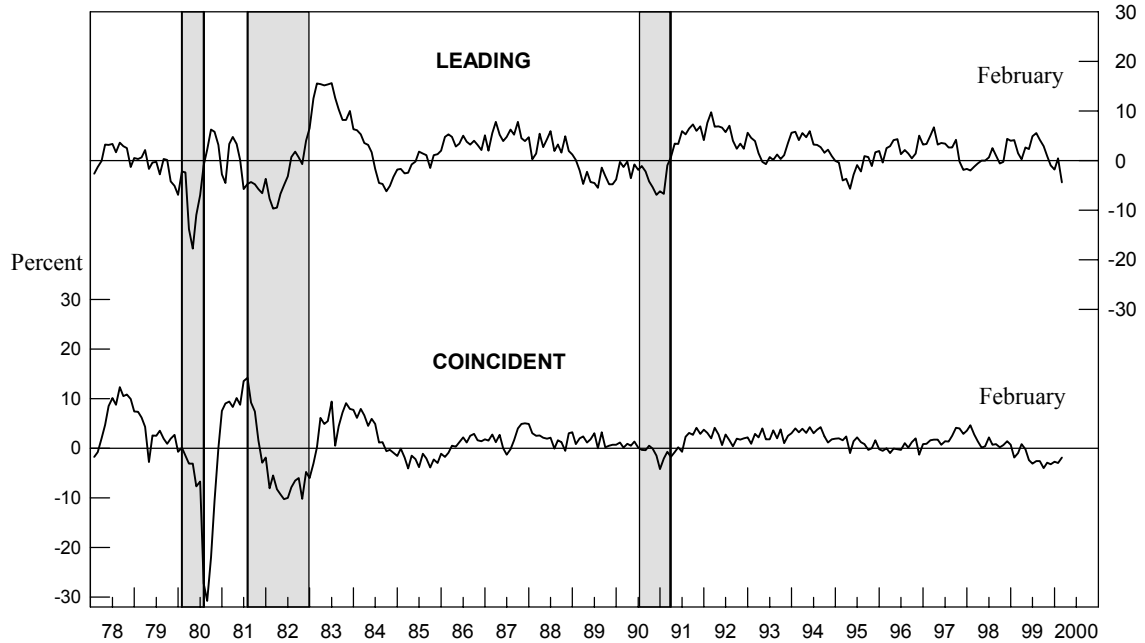
1977=100



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 9.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1978-2000

Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Explanation

Each month, the U.S. Geological Survey tracks the effects of the business cycle on five U.S. metal industries by calculating and publishing composite indexes of leading and coincident indicators. Wesley Mitchell and Arthur Burns originated the cyclical-indicators approach for the economy as a whole at the National Bureau of Economic Research in the mid-1930's. Over subsequent decades this approach was developed and refined, mostly at the National Bureau, under the leadership of Geoffrey H. Moore.¹

A business cycle can briefly be described as growth in the level of economic activity followed by a decline succeeded by further growth. These alternating periods of growth and decline do not occur at regular intervals. Composite indexes, however, can help determine when highs and lows in the cycle might occur. A composite index combines cyclical indicators of diverse economic activity into one index, giving decision makers and economists a single measure of how changes in the business cycle are affecting economic activity.

The indicators in the metal industry leading indexes historically give signals several months in advance of major changes in a coincident index, a measure of current metal industry activity. Indicators that make up the leading indexes are, for the most part, measures of anticipations or new commitments to various economic activities that can affect the metal industries in the months ahead.

Composite coincident indexes for the metal industries consist of indicators for production, shipments, and total employee hours worked. As such, the coincident indexes can be regarded as measures of the economic health of the metal industries.

Four of the metal industry coincident indexes, those for primary metals, steel, primary aluminum, and aluminum mill products, reflect their classifications in the U.S. Standard Industrial Classification (SIC). The SIC is the main classification used by the United States government and industry in collecting and tabulating economic statistics. The coincident index for copper is a blend of two different copper industries, primary smelting and refining of copper and rolling, drawing, and extruding of copper.

Of the five metal industries, primary metals is the broadest, consisting of twenty-six different metal processing industries. The steel, aluminum, and copper industries are parts of the primary metals industry.

The metal industry leading indexes turn before their respective coincident indexes an average of 9 months for primary metals and 8 months for steel and copper. The average lead time for the primary aluminum leading index is 6 to 8 months, and the average lead time for the aluminum mill products leading index is 6 months.

¹Business Cycle Indicators, A monthly report from The Conference Board (March 1996).

The leading index of metal prices, also published in the *Metal Industry Indicators*, is designed to signal changes in a composite index of prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange. On average, this leading index indicates significant changes in price growth about 8 months in advance.

The growth rate used in the *Metal Industry Indicators* is a 6-month smoothed growth rate at a compound annual rate, calculated from a moving average. Moving averages smooth fluctuations in data over time so that trends can be observed. The 6-month smoothed growth rate is based upon the ratio of the latest monthly value to the preceding 12-month moving average.

$$\left[\left(\frac{\text{current value}}{\text{preceding 12-month moving average}} \right)^{\frac{12}{6.5}} - 1.0 \right] * 100$$

Because the interval between midpoints of the current month and the preceding 12 months is 6.5 months, the ratio is raised to the 12/6.5 power to derive a compound annual rate.

The growth rates measure the near-term industry trends. They, along with other information about the metal industries and the world economy, are the main tools used to determine the outlook of the industries. A 6-month smoothed growth rate above +1.0% usually means increasing growth; a rate below -1.0% usually means declining growth.

The next summary is scheduled for release on MINES FaxBack at 10:00 a.m. EDT, Friday, May 19. Access MINES FaxBack from a touch-tone telephone attached to a fax machine by dialing 703-648-4999. The address for *Metal Industry Indicators* on the World Wide Web is: <http://minerals.usgs.gov/minerals/pubs/mii/>

The *Metal Industry Indicators* is produced at the U.S. Geological Survey by the Minerals Information Team. The report is prepared by George Swisko (703-648-4912), e-mail (gswisko@usgs.gov), Kenneth Beckman (703-648-4916), e-mail (kbeckman@usgs.gov), and Gail James (703-648-4915), e-mail (gjames@usgs.gov). The former Center for International Business Cycle Research, under the direction of Dr. Geoffrey H. Moore, and the former U.S. Bureau of Mines developed the metal industry leading and coincident indexes in the early 1990's. Customers can send mail concerning the *Metal Industry Indicators* to the following address:

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